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EXAMINER
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ART UNIT	PAPER NUMBER
2622	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/697,285	NAKAHIRA, TOSHIAKI	
	Examiner	Art Unit	
	RICHARD M. BEMBEN	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 17-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12-14,17,18 and 22-27* is/are rejected.

7)☒ Claim(s) *11 and 19-21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/23/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 and 22 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claim 22 is objected to because of the following informalities: lines 11-12, change “the the” to “the”. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 12, 22 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,700,607 issued to Misawa.

Regarding **claim 1**, Misawa discloses a digital camera (refer to Figures 5 and 6), comprising:

an imaging device (c. 4, ll. 1-47; Figure 1, CCD 10; however the imaging device can also be MOS type or CID, see c. 5, ll. 41-45) driven by a plurality of kinds of drive

modes (c. 4, l. 48 - c. 5, l. 40, Figures 2A-4B), the plurality of kinds of drive modes including a draft mode (c. 7, l. 55 – c. 8, l. 17, the mode in which the imaging device is driven by reading the signals from 1/4 or 1/8 is considered “draft mode”) and a first frame mode (c. 8, ll. 29-44, the mode in which the imaging device is driven by reading the signals from 1/2 is considered "first frame mode");

an image display device having a number of pixels less than a number of pixels of the imaging device (c. 8, ll. 53-60, LCD 40); and

an enlarging display setting device configured to enlarge a part of an area of a whole image obtained by the imaging device at a desired enlargement ratio and to display the part of the area being enlarged as an enlarged image on the image display device (c. 8, l. 45 - c. 9, l. 14; Figures 7-9), wherein

the drive modes for driving the imaging device is changed to the first frame mode such that a resolution of the enlarged image is equal to or greater than a resolution of the image display device (c. 8, l. 29 - c. 9, l. 14; Figures 7-9),

the first frame mode including dividing the overall pixels of the imaging device into a plurality of fields (refer to c. 4, l. 47 - c. 5, l. 7 and Figures 2A-B), and reading only one field out of the plurality of fields of the imaging device to obtain image data in one field, the enlarged image being taken in from at least a portion of the image data in one field (c. 8, l. 61 – c. 9, l. 14).

Note that even though Misawa discloses a mode in which all the pixels are read out of the image sensor, the examiner defines the mode in which 1/2 of the pixels are read out to be equivalent to Applicant's "first frame mode". Also, the “first frame mode”

(as defined in the Applicant's invention and as designated by the Examiner in Misawa) is a thinned readout mode which is characterized in that it performs less thinning than the "draft mode" (as defined in the Applicant's invention and as designated by the Examiner in Misawa).

Examiner's suggestion: There appears to be a good deal of prior art describing altering the readout of an image sensor with many pixels to accommodate image display on a display with few pixels. That said, the applicant may want to focus further amendment on using three fields during a frame mode read as discussed on p. 12 of Applicant's specification.

Regarding **claim 2**, Misawa discloses the digital camera according to claim 1 and further discloses: an enlarging display position designating device configured to designate a desired position in an image displayed on the image display device, wherein the image displayed on the image display device is enlarged around the position designated by the enlarging display position designating device (c. 8, ll. 45-52, "central part enlargement button" designates a desired position in an image displayed to be enlarged).

Regarding **claim 12**, Misawa discloses the digital camera according to claim 1 and further discloses that when an enlargement instruction is input to the enlarging display setting device for a predetermined period of time or more, the drive mode is changed to the first frame mode (c. 8, l. 45 - c. 9, l. 14, "In order to realize such a central

part enlarging function, the solid-state imaging device 28 is driven and the captured image is displayed on the LCD 40 as described below.").

Regarding **claim 22**, Misawa discloses a digital camera (refer to Figures 5 and 6), comprising:

an imaging device (c. 4, ll. 1-47; Figure 1, CCD 10; however the imaging device can also be MOS type or CID, see c. 5, ll. 41-45) driven by a plurality of kinds of drive modes (c. 4, l. 48 - c. 5, l. 40, Figures 2A-4B), the plurality of kinds of drive modes including a draft mode (c. 7, l. 55 – c. 8, l. 17, the mode in which the imaging device is driven by reading the signals from 1/4 or 1/8 is considered “draft mode”) and a first frame mode (c. 8, ll. 29-44, the mode in which the imaging device is driven by reading the signals from 1/2 is considered "first frame mode");

an image display device having a number of pixels less than a number of pixels of the imaging device (c. 8, ll. 53-60, LCD 40); and

means for enlarging a part of an area of a whole image obtained by the imaging device at a desired enlargement ratio and for displaying the part of the area being enlarged as an enlarged image on the image display device (c. 8, l. 45 - c. 9, l. 14; Figures 7-9),

wherein one of the at least two kinds of drive modes for driving the imaging device is changed to the first frame mode such that a resolution of the the enlarged image is equal to or greater than a resolution of the image display device (c. 8, l. 29 - c. 9, l. 14; Figures 7-9),

the first frame mode including dividing the overall pixels of the imaging device into a plurality of fields (refer to c. 4, l. 47 - c. 5, l. 7 and Figures 2A-B), and reading only one field out of the plurality of fields of the imaging device to obtain image data in one field, the enlarged image being taken in from at least a portion of the image data in one field (c. 8, l. 61 – c. 9, l. 14).

Note that even though Misawa discloses a mode in which all the pixels are read out of the image sensor, the examiner defines the mode in which 1/2 of the pixels are read out to be equivalent to Applicant's "first frame mode". Also, the “first frame mode” (as defined in the Applicant’s invention and as designated by the Examiner in Misawa) is a thinned readout mode which is characterized in that it performs less thinning than the “draft mode” (as defined in the Applicant’s invention and as designated by the Examiner in Misawa).

Examiner’s suggestion: There appears to be a good deal of prior art describing altering the readout of an image sensor with many pixels to accommodate image display on a display with few pixels. That said, the applicant may want to focus further amendment on using three fields during a frame mode read as discussed on p. 12 of Applicant’s specification.

Regarding **claim 23**, Misawa discloses the digital camera according to claim 22 and further discloses: means for designating a desired position in an image displayed on the image display device, wherein the image displayed on the image display device is enlarged around the position designated by the means for designating (c. 8, ll. 45-52,

"central part enlargement button" designates a desired position in an image displayed to be enlarged).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 3, 4, 13 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Misawa in view of U.S. Patent No. 6,130,420 issued to Tanaka et al., hereinafter "Tanaka".

Regarding **claim 3**, the limitations of claims 1 and 2 are taught above by the Misawa reference. Misawa further discloses a timing generator configured to generate clock signals to drive the imaging device (refer to c. 4, ll. 1-45, specifically the discussion of pulses supplied from a “CCD drive circuit"). It is also inherent that there is a system clock which generates signals that drive the image sensing device disclosed by Misawa. However, Misawa discloses that when read out mode is changed between a “draft” mode and "first frame mode” the refresh rate changes, i.e. is lower when in "first frame mode" (c. 9, l. 66 - c. 10, l. 2). Therefore, one would infer that the driving frequency is maintained between the modes.

Tanaka discloses an imaging device (c. 3, l. 59, CCD) having at least two read modes: a first mode and a second mode which reads out fewer pixels than the first

mode (c. 4, ll. 51-58). Tanaka further discloses a timing generator configured to generate clock signals to drive the imaging device and a clock generator configured to change clock signals input to a timing generator from one frequency to another frequency (c. 4, l. 42 - c. c. 5, l. 2). Tanaka allows changes in frequency depending on the readout mode. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to change from one frequency to another frequency as disclosed by Tanaka in the camera system disclosed by Misawa in order to reduce power consumption when it is acceptable to drive the imaging device at a lower frequency. Note that reducing the consumption of electricity is intended by Misawa (c. 8, ll. 11-12).

Regarding **claim 4**, refer to the rejection of claim 3 above and Tanaka further discloses that when the drive mode is changed from a first read mode to a second read mode (again, a first mode and a second mode which reads out fewer pixels than the first mode… this is analogous to Misawa's read modes discussed above in the rejection of claim 1), a refresh rate of an image output from one frame of the imaging device is prevented from changing by changing a clock frequency output from the clock generator (refer to Figures 1, 6A, 6B, 8A, and 8B; c. 4, ll. 43-58; c. 6, ll. 4-61; c. 8, l. 4 – c. 9, l. 15).

Regarding **claim 13**, refer to the rejection of claim 4 above and Tanaka further discloses that the camera comprises a switch (selector 24) configured to switch a setting if the clock frequency output from the clock generator is changed or not when

the selected drive mode (e.g. from all-pixel read-out mode to thinned read-out mode) is changed (to a mode such as the first frame mode). Please refer to Figure 1 and c. 6, ll. 4-61.

Regarding **claims 24, 25 and 26**, refer to the rejections of claims 3, 4 and 13, respectively.

7. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Misawa in view of Tanaka in further view of U.S. Patent No. 6,870,556 issued to Koide et al., hereinafter "Koide".

Regarding **claim 5**, the limitations of claim 4 are taught above, and while Tanaka does teach that the clock frequency output from the clock generator is changed, Tanaka does not explicitly disclose that an exposure amount is prevented from changing by changing a number of electronic shutter pulses output to the imaging device. However, noting the Koide reference, Koide teaches a digital camera (image sensing unit 11) wherein when the clock frequency output from a clock generator is changed (i.e. when the CCD operating rate is changed from A Hz to B Hz), an exposure amount is prevented from changing by changing a number of electronic shutter pulses (electronic shutter value changed from Sf to Sx) output to the imaging device. Please refer to Figs. 5 and 6, and Col. 13, Line 7 - Col. 14, Line 45. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the changing of electronic shutter pulses output to the imaging device during clock

frequency change, as taught by Koide, with the changes in clock frequency output from the clock generator, as taught by Misawa in view of Tanaka. One would have been motivated to do so because, as Koide teaches in Col. 3, Lines 8-13, changing the electronic shutter pulses output when the clock frequency is changed prevents overexposure of the image displayed on the LCD, thus providing a similar view to that which will be recorded on a recording medium.

Regarding **claim 6**, the limitations of claim 4 are again taught above, and the Koide reference also teaches that even when the clock frequency output from the clock generator is changed (i.e. when the CCD operating rate is changed from A Hz to B Hz), an exposure amount is prevented from changing by keeping a pulse interval between electronic shutter pulses output to the imaging device, as is again taught in Figs. 5 and 6, and Col. 13, Line 7 - Col. 14, Line 45.

8. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Misawa in view of U.S. Pub. No. 2001/0012072 filed by Uneo.

Regarding **claim 8**, the limitations of claim 1 are taught above by the Misawa reference, and while Misawa does teach that the camera comprises a release button used for performing a shutter release operation for photographing (c. 6, l. 66, "shutter release button") and that the camera has an auto focus function (AF) (c. 7, ll. 36-42; c. 10, ll. 23-34), Misawa fails to show that the camera performs the shutter release operation while depressing the release button stepwise, and wherein when the release

button is depressed at a first step (i.e. half press), an auto focus function is performed and an enlarged image is displayed on the image display device. However, noting the Ueno reference, Ueno teaches a digital camera comprising a release button (shutter-release button 1) used for performing a shutter release operation for photographing, wherein the digital camera has an auto focus function (in-focus confirmation) and performs the shutter operation while depressing the release button stepwise (two-stroke type shutter release button), and wherein when the release button (1) is depressed at a first step (i.e. pressed half-way), an auto focus function is performed and an enlarged image is displayed on the image display device (electronic viewfinder 8). Please refer to Figs. 4 and 7, as well as Paras. [0047] and [0054-0059]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the stepwise operation of the shutter button and the enlarged image display of the object to be focused, as taught by Ueno, with the auto focusing function of Misawa. One would have been motivated to do so because, as Ueno teaches in Para. [0005], the small display on the camera makes it difficult for an in-focus determination to be made by the viewer, and thus enlarging the area to be focused aides the user in such a determination. Further, by providing a stepwise release button to control the auto focus timing, the use of many buttons by the operator of the camera can be avoided, thus aiding in quick capture of a desired scene.

Regarding **claim 9**, again the limitations of claim 1 are set forth above, and Paras. [0056-0057] of the Ueno reference teach that a release button (shutter button 1)

is used for performing a shutter release operation for photographing, wherein when the release button is depressed (i.e. pressed all the way), the whole image (image data representing the image of the subject) is recorded while displaying the enlarged image on the image display device.

Regarding **claim 10**, again the limitations of claim 1 are shown above, and Ueno further teaches that even though a first enlargement instruction is input to the enlarging display setting device (i.e. half- press), a maximum enlarged image (in focus confirmation image shown in Fig. 6) is displayed on the image display device under the condition that the selected drive mode is not changed (which includes not changing to a first frame mode). Please refer again to Paras. [0047] and [0054-0059].

9. Claims 14 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Misawa in view of Tanaka in further view of U.S. Patent No. 6,700,610 issued to Kijima et al., hereinafter "Kijima".

Regarding **claim 14**, the limitations of claim 13 are taught above by Misawa in view of Tanaka, but the combination fails to teach that the camera comprises a power supply capacity checking device to check and detect a capacity of a power supply, wherein when the power supply capacity checking device detects that the capacity of the power supply is less than a predetermined value, the clock frequency output from the clock generator is not increased regardless of whether the switch switches the setting or not. However, noting the Kijima reference, Kijima teaches a digital camera

having a power supply capacity checking device (battery checker 27) configured to check and detect a capacity of a power supply (e.g. a battery), wherein when the power supply capacity checking device detects that the capacity of the power supply is less than a predetermined value, the clock frequency output from the clock generator (i.e. output frequency from the signal generator 17) is not increased (i.e. from frequency fl to frequency f2) regardless of whether the switch switches the setting or not. Please refer to Fig. 8 and Col. 11, Line 47 - Col. 12, Line 9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the power supply capacity checking device of Kijima with the digital camera of Misawa in view of Tanaka. One would have been motivated to do so because, as Kijima teaches in Col. 4, Lines 50-62, increasing the clock frequency output from a clock generator greatly increases the power consumption from the power supply, possibly resulting in stoppage of the system operation if the power supply reaches a low level. Thus, by checking the power supply capacity before increasing clock frequency, the user can be assured that the operation of the system will not cease solely due to a change in clock frequency.

Regarding **claim 27**, refer to the rejection of claim 14.

10. Claims 7, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Misawa.

Regarding **claim 7**, Misawa discloses the digital camera according to claim 1 and discloses a focus function such that when the focus function is performed the enlarged

image is displayed on the image display device in accordance with an instruction to the enlarging display setting device (c. 8, ll. 18-52). However, Misawa does not disclose that the focus function is manual.

Official Notice is taken that it is well known in the art of digital cameras to allow a photographer to manually focus an image, especially when in an artistic mode such as a macro mode. Misawa discloses the need for precise focus control in the macro mode (c. 8, ll. 28-44). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to allow manual focus, at least in the macro mode, in the digital camera disclosed by Misawa. One would have been motivated to allow manual focus, especially in an artistic mode such as a macro mode, in order for a photographer to adjust the image to his/her taste. For example, when photographing a flower in a macro mode, it is often desired for just a single petal to be in focus as opposed to the main petal area, or vise versa. With manual focus, a photographer could obtain these results.

Regarding **claim 17**, Misawa discloses the digital camera according to claim 1 and further discloses a second frame mode such that an enlargement ratio is greater than an enlargement ratio for the first frame mode (refer to c. 8, ll. 53-60, normal driving mode where all pixels are read is considered "second frame mode"). However, Misawa does not disclose that the second frame mode includes dividing the overall pixels of the imaging device into a plurality of fields, and reading the plurality of fields of the imaging

device to obtain image data in plurality of fields, the enlarged image being taken in from at least a portion of the image data in the plurality of fields.

Official Notice is taken that it is well known in the art of solid state image sensors to read all the pixels from an image sensor using an interlaced read method, e.g. reading an odd field followed by an even field. To generalize, there are two basic methods employed when reading an image sensor: (1) interlaced which reads in fields or (2) progressive which reads line by line. Misawa discloses a mode in which all the pixels of the image sensor are read (c. 8, ll. 45-52). Further, Misawa demonstrates the ability to read fields of various sizes from the image sensor (c. 10, ll. 18-23). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to use the interlaced method during Misawa's all pixel read mode and to combine the fields to form a single image. Referring to Figure 5, Misawa discloses the appropriate hardware, mechanical shutter 26, digital signal processing part 34, and memory 36, to perform an interlaced read of this nature. There are many reasons to use an interlaced readout method. For example, recall that Misawa discloses using an interline transfer CCD with a Bayer Filter (as seen in Figures 2-4). One would have been motivated to read using the interlaced method in order to avoid color mixing in the vertical transfer registers (item 14 in Figure 2). Color mixing is a common problem and degrades image quality. Another reason would be to avoid severe image lag on the display.

Regarding **claim 18**, refer to the rejection of claim 17 and Misawa further discloses that the digital camera performs a focus operation, and the enlarged image displayed as a still image for a predetermined period of time when the focus operation is completed (c. 8, ll. 45-52).

Allowable Subject Matter

11. While reconsidered, claims 11 and 19-21 are still objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. See the reasoning in the previous office action.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD M. BEMBEN whose telephone number is (571)272-7634. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Richard M Bemben
Examiner, Art Unit 2622

/Lin Ye/
Supervisory Patent Examiner, Art Unit 2622